



ABSTRACTS IN URGENT CARE

- Gloves Are No Substitute for Proper Hand Hygiene
- Pediatric Antibiotic Prescribing in the U.S.: Frequent and Frequently Inappropriate
- FDA Approves Hand-Held Device to Spot Intracranial Hematomas
- Death Within 1 Week After ED Discharge
- Troponin Assays Improve Evaluation of Patients With Chest Pain

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Each month, Dr. Nahum Kovalski reviews a handful of abstracts from, or relevant to, urgent care practices and practitioners. For the full reports, go to the source cited under each title.

Gloves Are No Substitute for Proper Hand Hygiene

Key point: *Healthcare workers frequently neglect hand hygiene when they use gloves.*

Citation: Fuller C, Savage J, Besser S, et al. "The dirty hand in the latex glove": a study of hand hygiene compliance when gloves are worn. *Infect Control Hosp Epidemiol* 2011 Dec;32(12):1194-1199.

Although the use of latex gloves by healthcare workers (HCWs) can protect against transmission of pathogens, gloves are subject to perforation, and contamination can occur when the gloves are donned or removed. Consequently, WHO guidelines recommend that gloves be changed between patients and that hands be cleaned both before putting on gloves and after removing them. Investigators recently assessed compliance with these guidelines in 56 wards in 15 hospitals in the United Kingdom that were participating in a larger national study on HCWs' hand hygiene.

Overall, gloves were used in 26% of 7578 HCW hand-hygiene "moments." They were worn in 17% of low-risk contacts (when they would not have been clinically indicated) but were not worn in 25% of high-risk contacts (when they would have been indicated). The rates of hand-hygiene compliance before and af-

ter patient contact were 30% and 47%, respectively, when gloves were worn — significantly lower than those observed when gloves were not worn (40% and 52%).

Published in *J Watch Infect Dis*. December 14, 2011 — Richard T. Ellison III, MD. ■

Pediatric Antibiotic Prescribing in the U.S.: Frequent and Frequently Inappropriate

Key point: *Pediatric ambulatory care visits in the United States frequently lead to antibiotic prescriptions for conditions for which they are not clearly indicated.*

Citation: Hersh AL, Shapiro DJ, Pavia AT, Shah SS. Antibiotics prescribing in ambulatory pediatrics in the United States. *Pediatrics*. 2011;128(6):1053-1061.

Researchers examined nationally representative data from more than 60,000 pediatric ambulatory visits for the years 2006 through 2008. Among the findings:

- Antibiotics were prescribed in roughly 20% of the visits.
- Broad-spectrum antibiotics were prescribed in about half the visits that resulted in antibiotic prescriptions.
- Roughly a quarter of visits resulting in antibiotics were for acute respiratory tract infections for which antibiotics are not clearly indicated.
- Factors increasing the likelihood of broad-spectrum prescriptions included the use of private health insurance and geographic variation (with the highest risk rates in the South).



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FDA Approves Hand-Held Device to Spot Intracranial Hematomas

Key point: This is the first hand-held device intended to aid in the detection of intracranial hematomas, using near-infrared spectroscopy

Citation: <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm283520.htm>

By directing near-infrared light (which can penetrate bone) into the skull, the Infrascanner Model 1000 can detect characteristic differences in optical density that could signal intracranial bleeding. The data are transmitted wirelessly to a hand-held computer. Clinicians can use this information to help determine whether brain imaging is warranted.

“While patients with suspected brain injuries routinely receive a CT scan, this portable device offers emergency room physicians a non-invasive mechanism to aid in assessing whether an immediate CT scan is needed,” the FDA’s Christy Foreman said in a news release. ■

Death Within 1 Week After ED Discharge

Key point: In a large study, 1 in 2000 adult patients died within 7 days after ED discharge. Predictors of death included increasing age, noninfectious lung disease, and renal disease.

Citation: Gabayan GZ, Derosé SF, Asch SM, et al. Patterns and predictors of short-term death after emergency department discharge. *Ann Emerg Med* 2011;58(6):551-558.e2.

To determine the rate and predictors of death within 7 days after emergency department (ED) evaluation in adults, researchers studied data from the Kaiser Permanente system in Southern California and government databases.

During 2007 through 2008, there were 728,312 discharges of 475,829 patients and 357 deaths. The rate of death within 7 days of ED discharge was 0.05%. The major risk factor for death was older age. Patients aged ≥80 had nearly 11 times the odds of death relative to those aged 18–39.

Comorbid diseases that were strong predictors of death included noninfectious lung disease (odds ratio 7.1), renal disease (OR, 5.6), ischemic heart disease (OR, 3.8), neoplasm (OR, 3.7), and diseases of the blood (OR, 3.6).

Published in *J Watch Emerg Med*. December 22, 2011 — Daniel J. Pallin, MD, MPH. ■

Troponin Assays Improve Evaluation of Patients With Chest Pain

Key point: Among patients with suspected acute coronary syndrome, hsTnI or cTnI determination 3 hours after admission may

facilitate early rule-out of AMI. A serial change in hsTnI or cTnI levels from admission (using the 99th percentile diagnostic cutoff value) to 3 hours after admission may facilitate an early diagnosis of AMI.

Citation: Keller T, Zeller T, Ojeda F, et al. Serial changes in highly sensitive Troponin I assay and early diagnosis of myocardial infarction. *JAMA*. 2011;306(24):2684-2693.

To evaluate the diagnostic performance of a highly sensitive troponin I (hsTnI) assay, researchers compared it with a contemporary troponin I (cTnI) assay and their serial changes in the diagnosis of acute myocardial infarction (AMI). A total of 1818 patients with suspected acute coronary syndrome were consecutively enrolled at the chest pain units of the University Heart Center Hamburg, the University Medical Center Mainz, and the Federal Armed Forces Hospital Koblenz, all in Germany, from 2007 to 2008. Twelve biomarkers including hsTnI (level of detection, 3.4 pg/mL), and cTnI (level of detection, 10 pg/mL) were measured on admission and after 3 and 6 hours.

Of the 1818 patients, 413 (22.7%) were diagnosed as having AMI. For discrimination of AMI, the area under the receiver operating characteristic (ROC) curve was 0.96 (95% CI, 0.95-0.97) for hsTnI on admission and 0.92 (95% CI, 0.90-0.94) for cTnI on admission. Both were superior to the other evaluated diagnostic biomarkers. The use of hsTnI at admission (with the diagnostic cutoff value at the 99th percentile of 30 pg/mL) had a sensitivity of 82.3% and a negative predictive value (for ruling out AMI) of 94.7%. The use of cTnI (with the diagnostic cutoff value at the 99th percentile of 32 pg/mL) at admission had a sensitivity of 79.4% and a negative predictive value of 94.0%. Using levels obtained at 3 hours after admission, the sensitivity was 98.2% and the negative predictive value was 99.4% for both hsTnI and cTnI assays. Combining the 99th percentile cutoff at admission with the serial change in troponin concentration within 3 hours, the positive predictive value (for ruling in AMI) for hsTnI increased from 75.1% at admission to 95.8% after 3 hours, and for cTnI increased from 80.9% at admission to 96.1% after 3 hours. ■

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